

Box-and-Whisker Plots With The TI-83

The TI-83 calculator will draw box-and-whisker plots based upon the five-number summary values found under 1-Var Stats:

- Minimum value
- Quartile 1, or Q_1
- Median
- Quartile 3, or Q_3
- Maximum value

Example

At Columbus State Community College, 15 students were selected at random from a group registering on the last day of registration. The times (in hours) necessary for these students to complete registration follow:

1.7 2.1 0.8 3.5 1.5 2.6 2.1 2.8
3.1 2.1 1.3 0.5 2.1 1.5 1.9

First enter the data in L_1 .

L1	L2	L3	1
1.700	-----	-----	
2.100			
.800			
3.500			
1.500			
2.600			
2.100			
L1(1)=1.7			

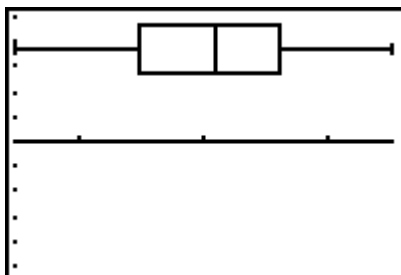
Now we will set the graphing window. Press the WINDOW key. Use $X_{min} = 0.5$, since that is the smallest value. Use $X_{max} = 3.5$ since that is the largest value. Use $X_{scl} = 1$. Use $Y_{min} = -5$ and $Y_{max} = 5$ to position the axis in the window.

WINDOW
Xmin=.5
Xmax=3.5
Xscl=1
Ymin=-5
Ymax=5
Yscl=1
Xres=1

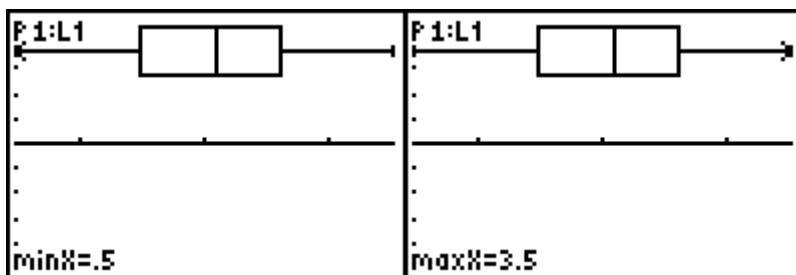
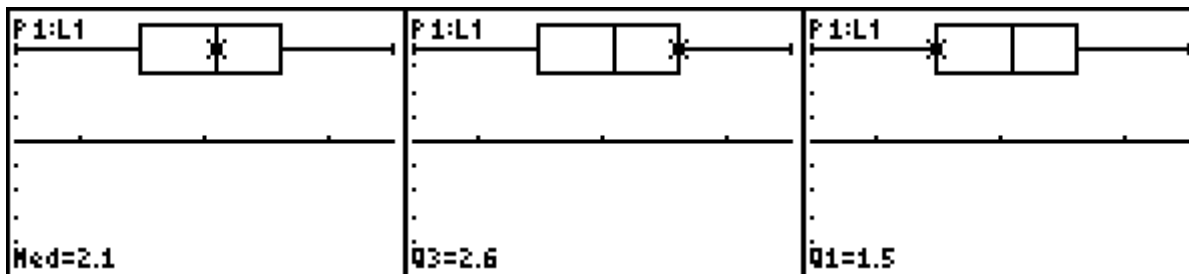
The next step is to select the box-and-whisker plot. Press 2nd STAT PLOT (above $Y=$). Highlight 1:Plot1 and press ENTER. Then on the next screen select On (put cursor on On and hit ENTER) and the box-and-whisker plot (second graph on the second row). For this example the data is in L_1 , so set Xlist to L_1 by pressing 2nd and the 1 key. Each data value is listed once for each time, so 1 is entered for Freq.

<table style="width: 100%; border-collapse: collapse;"> <tr><td colspan="2">STAT PLOTS</td></tr> <tr><td>1:Plot1...On</td><td></td></tr> <tr><td> L1 L2</td><td>▣</td></tr> <tr><td>2:Plot2...Off</td><td></td></tr> <tr><td> L1 L2</td><td>▣</td></tr> <tr><td>3:Plot3...Off</td><td></td></tr> <tr><td> L1 L2</td><td>▣</td></tr> <tr><td>4↓PlotsOff</td><td></td></tr> </table>	STAT PLOTS		1:Plot1...On		L1 L2	▣	2:Plot2...Off		L1 L2	▣	3:Plot3...Off		L1 L2	▣	4↓PlotsOff		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Plot1 Plot2 Plot3</td></tr> <tr><td>On Off</td></tr> <tr><td>Type: </td></tr> <tr><td>Xlist:L1</td></tr> <tr><td>Freq:1</td></tr> </table>	Plot1 Plot2 Plot3	On Off	Type:	Xlist:L1	Freq:1
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We are ready to graph the histogram. Press GRAPH.



Press TRACE and notice that a blinking cursor appears. Use the right and left arrow keys to display the five-number summary.



To leave the box-and-whisker plot, press 2nd QUIT.